



# VALERIE CATES

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## EDUCATION

- 2021 Bachelor of Health Sciences from Mount Royal University, Calgary, AB.
- *Major:* Health Sciences
  - *Minor:* Women & Gender Studies

## WORK EXPERIENCE

- 2021 - 2022 *Illustration and Website Management/Design for Dr. Jaideep Bains of the University of Calgary's Hotchkiss Brain Institute*  
<https://stressynomicslab.ca/>  
Calgary, AB.
- 2020 - 2022 *Research Assistant and Illustrations for Dr. Trevor Day of Mount Royal University's Integrative Physiology Lab*  
Calgary, AB.
- 2020 - present *Illustrator & Photographer for Havoc Hearts Embroidery*  
Calgary, AB.
- 2018 - present *Lead Photographer & Freelance Illustrator at Stray Books Publishing*  
Calgary, AB.

## RESEARCH EXPERIENCE

- 2021 *Avalanche Study at University of British Columbia Okanogan*
- A national collaboration examining how hypoxia, hypercapnia, and hypothermia influence respiratory and cardiovascular physiology. This invasive study was conducted over two weeks out of Dr. Philip Ainslie's lab and involved a team of 14, including myself.
- 2021 *Mask Rebreathe Study*
- A comprehensive comparison of respiratory and blood gases while wearing surgical masks and N95 respirators over 60-min at rest and during exercise.
- 2021 *Steady-State Chemoreflex Drive and Altitude Acclimatization Project*
- A methodological research project examining how to best assess altitude acclimatization with incremental ascent to 4240 m.



## ART EXHIBITS

- April 2022      *Showcased in The Circus of Science for recent MRU Health Sci Graduates  
Calgary, AB.*
- March 2022      *Showcased artist at RAW Canada's GENERATE  
Edmonton, AB.*
- February 2022      *Showcased artist at RAW Canada's GENERATE  
Calgary, AB.*

## PRESENTATIONS

- 2021      *Invited Presentation at University of British Columbia Okanagan*
- "Biomedical Art; Why Science Benefits from Art"
  - A 20-minute presentation showcasing my art, both science-related and non-science-related, to a group of PhD candidates, postdoctoral researchers, and research chairs
- 2021      *International Society of Arterial Chemoreception (ISAC) Conference  
(International Online Presentation)*
- "Steady-State Chemoreflex Drive Captures Ventilatory Acclimatization During Incremental Ascent to High Altitude While on Acetazolamide"
  - Presentation on how taking prophylactic doses of acetazolamide improves altitude acclimatization in native lowlanders
- 2021      *Cerebral Autoregulation Research Network (Car-Net) Seminar Series  
(International Online Presentation)*
- "Regional Blood Flow Responses During Acute Hypoxia in Healthy Humans: How do we Report Responses?"
  - Presentation on how hypoxia alters blood flow to different regions of the brain and how reporting that change in relative and absolute terms influences findings.

## WORKSHOPS

- 2021      *Best of Banff: Science Communication Program  
TELUS Spark Science, Calgary, AB.*
- An online weekend workshop for scientists and science enthusiasts to improve communication between scientists and general public.
- 2018      *Tom Lynch Watercolour Workshop  
Conception Bay South, NL.*
- A 5-day in-person workshop focusing on improving artistic flexibility, range, and creativity to create emotional watercolour paintings.



## VOLUNTEERING

- 2019 - 2021 *Executive Member & Copywriter in student-run club, Student Society of Science & Technology (SSST)  
Mount Royal University, Calgary, AB*
- 2017 - 2020 *Friendly Visitor on Neuroscience Units  
Foothills Hospital, Calgary, AB*

## PUBLICATIONS

- Keough JRG, Cates VC, Tymko MM, Boulet LM, Jamieson AN, Foster GE, & Day TA. Regional Differences in Cerebrovascular Reactivity in Response to Acute Isocapnic Hypoxia in Healthy Humans: Methodological Considerations. *Respir Physiol Neurobiol*. 2021 Jul 31:103770. doi: 10.1016/j.resp.2021.103770.
- Solloum T, Cates V, Marullo A, Javan M, Tymko M, Rickards C, Day T. . Cerebral Blood Flow Pulsatility Index is Unchanged during Superimposed Lower-Body Negative Pressure in Head-Up Tilt in Anterior and Posterior Cerebral Circulations. *The FASEB Journal*, 35(S1). 2021 May 14. doi: 10.1096/fasebj.2021.35.S1.04421.
- Cates V, Benke I, Cates M, Mitchel R, & Felizardo W. *Flowers: The Art of Rocky Mountain Cannabis*. Stray Books Limited. Calgary AB, 2019.

## AWARDS & FUNDING

- 2021 Best Unaccompanied Poster in the Faculty of Science & Technology's Research Days (Mount Royal University, Calgary, AB.)
- 2021 Physiological Society UK Summer Studentship
- 2020 Access to the Future Scholarship (Mount Royal University, Calgary, AB.)
- 2018-2019 Dean's & President's Honor Roll (Mount Royal University, Calgary, AB.)
- 2012 Calgary Electrical Club Scholarship for Photography (Crescent Heights High School, Calgary, AB.)

## ADDITIONAL ACCOMPLISHMENTS

- 2019 *Flowers: The Art of Rocky Mountain Cannabis* is within the Top 10 Bestsellers for the week of August 15<sup>th</sup>, 2019, according to The Calgary Herald
- 2019 Histology Watercolours featured in the Mount Royal University's Faculty of Science & Technology Research Days